

Appl. No. 09/767,282
Amdt. dated September 23, 2003
Reply to Office Action of June 24, 2003

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1.-6. (canceled)

Claim 7. (currently amended) A plasma processing apparatus comprising:
a carrier source adapted to generate a first RF signal at a carrier frequency;
a modulation source adapted to generate a second RF signal at a modulation frequency;
a modulator adapted to modulate the first RF signal with the second RF signal to form a frequency modulated signal;
a plasma processing chamber coupled to the modulator;
a transmission line for transmitting the frequency modulated signal; and
a single matching network adapted to receive the frequency modulated signal to provide impedance matching from the transmission line to a plasma, and
wherein the modulation frequency is less than about 0.1 times the carrier frequency.

Claim 8. (original) The apparatus of claim 7 further comprising:
an amplifier adapted to amplify the frequency modulated signal to generate a high power frequency modulated signal.

Claim 9. (canceled)

Claim 10. (original) The apparatus of claim 7 wherein the modulation source is further adapted to generate a third RF signal at an amplitude modulation frequency, and wherein the modulator is further adapted to modulate the first RF signal with the second RF signal and the third RF signal to form an frequency and amplitude modulated signal.

Claim 11. (original) The apparatus of claim 7 wherein the second RF signal is in the form of a sine wave.

Appl. No. 09/767,282
Amdt. dated September 23, 2003
Reply to Office Action of June 24, 2003

PATENT

Claim 12. (original) The apparatus of claim 7 wherein the apparatus is an etching apparatus.

Claims 13.-32. (canceled)

Claim 33. (previously presented) The apparatus of claim 7 wherein the modulation frequency is from about 0.1 to about 0.01 times the carrier frequency.

Claim 34. (previously presented) The apparatus of claim 7 wherein the carrier source is at a frequency of about 13.56 MHz and wherein the single matching network is adapted to transmit power at a frequency of about 13.56 MHz to the plasma processing chamber.